



67,200-572; TSMC 2001-0337  
Serial Number 09/998,343

**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

**APPEAL BRIEF**

**TO:** Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**RECEIVED**

JUL 09 2004

**FROM:** Tung & Associates  
838 West Long Lake Road - Suite 120  
Bloomfield Hills, MI 48302

Technology Center 2100

**DATE:** 13 May 2004

**REF:** Appellant : Hsu et al Filing Date : 30 November 2001  
Serial No. : 09/998,343 Att'y No. : 67,200-572; TSMC 01-0337  
Art Unit : 2125 Examiner : Zoila E. Cabrera  
Title : System and Method for Managing Work in Process (WIP)  
Handling Instructions

**EXPRESS MAIL CERTIFICATE**

Express Mail label Number EV 405 451 833 US  
Date of Deposit July 2/04

I hereby certify that this paper in triplicate and a credit card payment form in the amount of \$330.00 (required filing fee) are being deposited with the United States Postal Service via Express Mail on the date indicated above and is addressed to: Commissioner for Patents, Alexandria, VA 22313-1450.

  
Kathy Dixon

**APPEAL BRIEF**

Sir:

In response to rejection of the claims in the above referenced application for United States Patent in an office action mailed 5 February 2004 and made FINAL, appellant filed a notice of appeal on 5 May 2004. In accord with appellant's notice of appeal, please accept this appeal brief. No oral argument is requested.

67,200-572; TSMC 2001-0337  
Serial Number 09/998,343

1. Real Party in Interest

The real party in interest for this application is the assignee:

Taiwan Semiconductor Manufacturing Co., Ltd.  
121 Park Avenue, No. 3  
Science Based Industrial Park  
Hsin-Chu, Taiwan, Republic of China

An assignment has been recorded for this United States Patent application.

2. Related Appeals and Interferences

There are no related appeals or interferences for this United States Patent application.

3. Status of the Claims

Claims 1-12 are pending in this application. No claims have been withdrawn from consideration, canceled, allowed, objected to or subject to restriction/election within this application. Claims 1-12 are finally rejected under 35 U.S.C. § 103(a). Appeal is taken for claims 1-12 as finally rejected under 35 U.S.C. § 103(a).

4. Status of the Amendments

A reply, filed 2 April 2004, was submitted in response to the office action made FINAL, in order to overcome the Examiner's rejections of the claims pending within this application. In an advisory action mailed on 23 April 2004, the Examiner indicated that appellant's request for reconsideration was considered but did not place appellant's application in condition for allowance, for reasons generally of record.

5. Summary of the Invention

The invention provides a system and a method for flexibly managing production within a microelectronic fabrication facility. (paragraph 0018)

The invention realizes the foregoing object by providing direct customer access to a production control system for requesting, and preferably also effecting, a change in lot handling instructions for a work in process workload lot within a fabrication facility such as a microelectronic fabrication facility. (paragraph 0019)

The invention is claimed in two levels of scope. Independent claims 1 and 2, and dependent claims 3-6 are directed towards a system in accord with the invention. Independent claims 7 and 8, and dependent claims 9-12 are directed towards a method in accord with the invention.

Independent claim 1 is read on the specification and drawings as follows:

1. (previously presented) A computer assisted system for managing a work in process workload comprising:

means for storing identifying information for a microelectronic fabrication work in process workload lot; (Fig. 1, reference numeral 102; and paragraph 0032)

means for accessing the identifying information for the work in process workload lot; (Fig. 1, reference numeral 101 and 103; and paragraphs 0031 and 0033)

means for requesting and effecting a change in production of the work in process workload lot after accessing the identifying information for the work in process workload lot, wherein the means for requesting the change in production of the work in process workload lot provides for direct access by a customer. (Fig. 2, upper dotted line passing from reference numeral 201 to reference numeral 205; and paragraph 0037)

#### 6. Issue

Whether claims 1-12 may properly be rejected under 35 U.S.C. § 103(a) as being unpatentable over Athavale et al. (U.S. Patent No. 6,539,386; hereinafter "Athavale") in view of Chacon (U.S. Patent No. 6,128,588).

7. Grouping of Claims

Claims 1 and 3-6, group I, are directed towards a first claimed system embodiment of the invention.

Claim 2, group II, is directed towards a second claimed system embodiment of the invention.

Claims 7 and 9-12, group III, are directed towards a third claimed method embodiment of the invention.

Claim 8, group IV, is directed towards a fourth claimed method embodiment of the invention.

The claims stand or fall together within their respective groups.

8. Argument

I. Claims 1-12 may not properly be rejected under 35 U.S.C. § 103(a) as being unpatentable over Athavale in view of Chacon.

a. Athavale Subject Matter

Athavale (abstract, cover figure and paragraph bridging cols. 7-8) teaches a method and system for modifying a customer order within a manufacturing facility. The system includes a customer computer 22 connected to a network commerce server 26 with additional access to an order database server 28 that in turn controls a manufacturing and distribution facility 56. The method provides that a customer employs an ordering application 42 installed on the customer computer 22 to access a change order engine 44 installed on the network commerce server 26. Proposed changes are evaluated and approved by a customer prior to implementation within an order entry application 46 within the order database server 28.

b. Chacon Subject Matter

Chacon is cited at col. 2, lines 18-20 as teaching applicability of Chacon's invention to a microelectronic fabrication facility, and in particular a semiconductor wafer

microelectronic fabrication facility. Chacon (title, abstract and cover figure) is otherwise directed towards an integrated semiconductor wafer fabrication production characterization and scheduling system.

c. The Examiner's Assertions

Within the paragraph bridging pages 2-3 of the office action made FINAL, the Examiner reads Athavale onto appellant's claims 1-2, 4-8 and 10-12. In so doing, the Examiner acknowledges that Athavale fails to disclose Athavale's invention within the context of a microelectronic fabrication facility or within the context of a chemical work in process workload lot. The Examiner also acknowledges that Athavale fails to disclose the various microelectronic fabrication facilities claimed within appellant's claims 3 and 9.

Within the paragraph bridging pages 3-4 of the office action made FINAL, the Examiner nonetheless relies upon Chacon as teaching a microelectronic fabrication facility such as a semiconductor wafer microelectronic fabrication facility. The Examiner asserts that chemical processing occurs within the microelectronic fabrication facility. The Examiner rationalizes suggestion or motivation for modification or combination of Athavale with Chacon such as to "provide an improved fabrication facility wherein customers have access to their orders and thereby change their orders during manufacturing as taught by Athavale."

d. Appellant's Response

In response, appellant first acknowledges that Athavale does in fact teach a fabrication facility where customers have access to their orders and change their orders during manufacturing. Appellant also notes that Chacon teaches a microelectronic fabrication facility, and in particular a semiconductor wafer fabrication facility, where chemical processing may occur. However, in a first instance appellant also notes that an Examiner must consider the prior art in its entirety, including disclosures that teach away from an appellant's claims. MPEP 2141.02. Within the instant application, Chacon in particular teaches away from appellant's

67,200-572; TSMC 2001-0337  
Serial Number 09/998,343

claimed invention since while appellant within claims 1-2 and 6-7 claims a system and a method for managing work in process workload where a means for requesting and effecting a change in production of a work in process workload lot provides for direct access by a customer, Chacon teaches the opposite of that.

“A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” MPEP 2141.02 (citing *W.L. Gore & Associates, Inc. v. Garlock, Inc.* (emphasis in original and citation omitted)).

In particular, Chacon’s integrated characterization and production control scheduling system is intended (abstract) “as a practical alternative to expensive experimentation on [an] actual production system.” Thus, Chacon clearly teaches away from appellant’s claimed invention since appellant’s claimed invention is directed towards a production control system and method where a customer may experiment with actual production while Chacon’s invention is directed towards a production control system and method intended to avoid customer experimentation with actual production.

Since Chacon’s disclosed invention thus teaches away from appellant’s claimed invention and is thus diametrically opposed with respect to a critical feature of appellant’s claimed invention of customer access for requesting and effecting a change in production of a work in process workload lot, appellant asserts that Chacon may not properly be employed in conjunction with other references for rejecting any of appellant’s claims to appellant’s invention under 35 U.S.C. § 103(a).

As an adjunct to the foregoing, appellant further asserts that if Chacon is nonetheless employed in combination with Athavale for rejecting appellant’s claims to appellant’s invention under 35 U.S.C. § 103(a), then no suggestion or motivation for modification or combination of Athavale with Chacon exists for reasons as proposed by the

Examiner. The Examiner's rationale for suggestion or motivation for modification or combination of Athavale with Chacon, while applicable to Athavale, is not apparently simultaneously applicable to Chacon. MPEP 2143.01.

In further detail, appellant again first notes that Athavale (title, abstract and cover figure) teaches a manufacturing system and method that allows a customer to modify a customer order within a manufacturing facility. In effect, such a system and method allow a customer to experiment with the actual production control scheduling of the customer's order within the manufacturing facility. In contrast, Chacon (title, abstract and cover figure) teaches a microelectronic fabrication production control scheduling and characterization system that is intended to provide "a practical alternative to expensive experimentation on [an] actual production system." Since: (1) Athavale teaches a system and method that provides for and encourages experimentation with ongoing production within a manufacturing facility; while (2) Chacon inapposite thereto teaches a system and method specifically intended to avoid experimentation with ongoing production within a manufacturing facility, appellant asserts that Chacon is materially in conflict with Athavale, as well as appellant's claimed invention. In accord with MPEP 2143.01, an Examiner must consider this conflict and weigh the power of each reference to suggest a solution to the problem which appellant's invention is intended to address.

"Where the teachings of two or more prior art references conflict, the examiner must weight the power of each reference to suggest solutions to one of ordinary skill in the art, considering the degree to which one reference might accurately discredit another." MPEP 2143.01 (citing *In re Young*, (citation omitted))

With respect to the instant application, appellant asserts that such weighing has not yet been undertaken and is unlikely to be readily singularly reconcilable since the teachings of Athavale and Chacon are clearly directly inapposite. One possible reconciliation is that

67,200-572; TSMC 2001-0337  
Serial Number 09/998,343

Athavale's system and method that provide for customer access to ongoing production control scheduling are applicable to Athavale's disclosed manufacturing facilities and additional unenumerated manufacturing facilities, but are otherwise generally limited to manufacturing facilities other than those where particularly expensive or otherwise complex manufacturing processes are undertaken. This reconciliation takes into consideration Chacon's goal of avoiding customer intervention into production control scheduling that results in expensive experimentation on an actual production system.

Athavale's disclosed manufacturing and distribution facilities (col. 10, lines 19-28) are intended as facilities "for manufacturing or assembling hardware equipment . . . a software distribution center . . . a distribution center for distributing preassembled products, and/or a service center that provides consulting, professional or other services." Clearly any of the foregoing facilities is unlikely intended as necessarily requiring considerable capital expense for its construction or considerable direct expense for its ongoing operation. Thus, customer intervention for production control scheduling within any of Athavale's enumerated manufacturing or distribution facilities is unlikely to result in "expensive experimentation on [an] actual production system."

In contrast, microelectronic fabrication facilities such as semiconductor wafer fabrication facilities (where chemical processing may occur) in accord with Chacon's invention are generally recognized in the art as expensive manufacturing facilities to build and to operate. They often schedule multiple shifts such as to maximize production volume and better offset considerable tooling and infrastructure capital expense. In order to avoid "expensive experimentation on [an] actual production system" within the context of a microelectronic fabrication facility, alternative approaches, such as pilot scale production employing pilot scale facilities, are often employed.



In summary, the Examiner has not apparently attempted to reconcile Athavale's and Chacon's disparate teachings with respect customer intervention into ongoing production control scheduling within manufacturing facilities. However, appellant's foregoing reconciliation of Athavale and Chacon is plausible within the context of Athavale's and Chacon's teachings (i.e., Athavale may be extended to otherwise unenumerated manufacturing facilities where experimentation with production is comparatively inexpensive, but not to Chacon's specifically enumerated microelectronic fabrication facilities or other manufacturing facilities where experimentation with production is comparatively expensive).

Moreover, appellant's reconciliation of Athavale and Chacon motivates against their modification or combination for reasons as cited by the Examiner. The Examiner rationalizes suggestion or motivation for modification or combination of Athavale and Chacon predicated upon Athavale's teaching of providing an improved fabrication facility where customers have access to their orders and thereby change their orders during the manufacturing process. Since this rationalization is applicable to Athavale (where comparatively lower cost manufacturing is involved), but not to Chacon, (where comparatively high cost manufacturing is involved), appellant asserts that no suggestion or motivation for modification or combination of Athavale with Chacon exists for reasons as cited by the Examiner. The reasons are apparently not applicable to Chacon.

Thus, since the Examiner has not reconciled Athavale and Chacon, but appellant has proposed a consistent reconciliation that motivates against modification or combination of Athavale with Chacon, appellant asserts that Athavale may not properly be combined with Chacon for reasons as proposed by the Examiner.

In final summary: (1) the Examiner acknowledges that each and every limitation within appellant's invention as disclosed and claimed within claims 1-12 is not taught within Athavale; (2) the Examiner finds the remaining needed limitations within Chacon; and (3)

Chacon may either: (a) not properly be employed in rejecting any of appellant's claims to appellant's invention; or (b) not properly be combined with Athavale for reasons as cited by the Examiner since the teachings of Athavale and Chacon conflict such that the reasoning employed by the Examiner for modification or combination thereof applies to Athavale but is not apparently applicable to Chacon. In light of the foregoing, appellant asserts that none of appellant's claims to appellant's invention may properly be rejected under 35 U.S.C. § 103(a) as being unpatentable over Athavale in view of Chacon.

In light of the foregoing responses, appellant thus respectfully requests that the Examiner's rejections of claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over Athavale in view of Chacon be reversed.

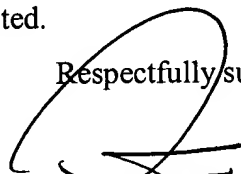
9. Summary

Appellant's invention as disclosed and claimed within amended claims 1-2 and amended claim 7-8 is directed towards a method and a system for managing a work in process workload. The method and the system allow for customer access to change production parameters of the work in process workload. The work in process workload is a microelectronic fabrication work in process workload or a chemical work in process workload. The prior art may not properly be combined to provide appellant's claimed invention.

10. Conclusion

Appellant requests that the Board of Patent Appeals and Interferences reverse the Examiner's action in rejecting the claims within this application within the office action made FINAL. Allowance of all claims remaining within this application, in accord with the appended copy of the claims, is respectfully requested.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Randy W. Tung', is written over a horizontal line.

Randy W. Tung (Reg. No. 31,311)

**APPENDIX**  
**COMPLETE COPY OF THE CLAIMS**

1. (previously presented) A computer assisted system for managing a work in process workload comprising:

means for storing identifying information for a microelectronic fabrication work in process workload lot;

means for accessing the identifying information for the work in process workload lot;

means for requesting and effecting a change in production of the work in process workload lot after accessing the identifying information for the work in process workload lot, wherein the means for requesting the change in production of the work in process workload lot provides for direct access by a customer.

2. (previously presented) A computer assisted system for managing a work in process workload comprising:

means for storing identifying information for a chemical work in process workload lot;

means for accessing the identifying information for the work in process workload lot;

means for requesting and effecting a change in production of the work in process workload lot after accessing the identifying information for the work in process workload lot, wherein the means for requesting the change in production of the work in process workload lot provides for direct access by a customer.

3. (original) The system of claim 1 wherein the system is employed within a microelectronic fabrication facility selected from the group consisting of integrated circuit microelectronic fabrication facilities, ceramic substrate microelectronic fabrication facilities, solar cell optoelectronic microelectronic fabrication facilities, sensor image array optoelectronic microelectronic fabrication facilities and display image array optoelectronic microelectronic fabrication facilities.

4. (original) The system of claim 1 wherein the change in production of the work in process workload lot is requested directly by the customer without an intervening approval by a customer engineer.

5. (original) The system of claim 1 wherein the computer assisted system is accessible by the customer through a distributed communications network.

6. (original) The system of claim 1 wherein the computer assisted system is accessible by the customer through an Internet distributed communications network.

7. (previously presented) A method for managing a work in process workload comprising:  
providing a computer assisted system for managing a microelectronic fabrication work in process workload lot, the computer assisted system comprising:

means for storing identifying information for the work in process workload lot;

means for accessing the identifying information for the work in process workload lot; and

means for requesting and effecting a change in production of the work in process workload lot after accessing the identifying information for the work in process workload lot, wherein the means for requesting the change in production of the work in process workload lot provides for direct access by a customer; and

requesting the change in production of the work in process workload lot directly by the customer.

8. (previously presented) A method for managing a work in process workload comprising:

providing a computer assisted system for managing a chemical work in process workload lot, the computer assisted system comprising:

67,200-572; TSMC 2001-0337  
Serial Number 09/998,343

means for storing identifying information for the work in process workload lot;  
means for accessing the identifying information for the work in process workload lot; and

means for requesting and effecting a change in production of the work in process workload lot after accessing the identifying information for the work in process workload lot, wherein the means for requesting the change in production of the work in process workload lot provides for direct access by a customer; and

requesting the change in production of the work in process workload lot directly by the customer.

9. (original) The method of claim 7 wherein the system is employed within a microelectronic fabrication facility selected from the group consisting of integrated circuit microelectronic fabrication facilities, ceramic substrate microelectronic fabrication facilities, solar cell optoelectronic microelectronic fabrication facilities, sensor image array optoelectronic microelectronic fabrication facilities and display image array optoelectronic microelectronic fabrication facilities.

10. (original) The method of claim 7 wherein the change in production of the work in process workload lot is requested directly by the customer without an intervening approval by a customer engineer.

11. (original) The method of claim 7 wherein the computer assisted system is accessible by the customer through a distributed communications network.

12. (original) The method of claim 7 wherein the computer assisted system is accessible by the customer through an Internet distributed communications network.